

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1           1.       (Original)     An imaging tape cartridge picker system for use in aligning a  
2     tape cartridge picker with cartridges in cells of a tape cartridge magazine, comprising:  
3           a picker assembly;  
4           illumination sources disposed at the front of the picker assembly for illuminating an  
5     object;  
6           an imager disposed on the front of the picker assembly for gathering image data of  
7     the object; and  
8           a processor, coupled to the imager and illumination sources, for thresholding the  
9     image data obtained from the imager and for controlling the illumination sources;  
10          wherein the processor uses bounding boxes to identify the location of a desired  
11     physical feature in the thresholded image.

1           2.       (Original)     The imaging tape cartridge picker system of claim 1 wherein  
2     the processor identifies the location of the desired physical feature using the bounding boxes  
3     by finding a vertical feature of the desired physical feature by finding a valid vertical  
4     bounding box, determining whether a valid vertical feature is found, using the valid vertical  
5     feature as a reference point for the search for the horizontal feature and finding a valid  
6     horizontal bounding box of the desired physical feature when a vertical feature is positively  
7     identified, determining whether a valid horizontal feature is found and identifying a top-left  
8     intersection of the vertical and horizontal bounding boxes with the bottom-right corner of the  
9     desired physical feature when a valid horizontal feature is found.

1           3.       (Original)     The imaging tape cartridge picker system of claim 2 wherein  
2     the desired physical feature comprises a top left intersection in a bottom-right corner of a  
3     vertical and horizontal member of a cartridge cell within a tape library system.

1           4.       (Original)     The imaging tape cartridge picker system of claim 3 wherein  
2     the position of the intersection relative to the imager is used to calibrate the physical position  
3     of the picker assembly.

1           5.       (Original)     The imaging tape cartridge picker system of claim 1 wherein  
2     the desired physical feature comprises a top left intersection of a vertical and horizontal  
3     member of a cartridge cell within a tape library system.

1           6.       (Original)     The imaging tape cartridge picker system of claim 5 wherein  
2     the position of the intersection relative to the imager is used to calibrate the physical position  
3     of the picker assembly.

1           7.       (Currently Amended) A method for use in aligning a tape cartridge picker  
2       with cartridges in cells of a tape cartridge magazine, comprising:  
3           illuminating an object with an illumination source;  
4           gathering image data for the illuminated object; ~~and~~  
5           thresholding the image data; and  
6           processing the thresholded image data by using bounding boxes to identify the  
7       location of a desired physical feature in the thresholded image data;  
8           wherein the desired physical feature comprises a top left intersection of a vertical and  
9       horizontal member of a cartridge cell within a tape library system.

1           8.     (Original)     The method of claim 7 wherein the processing the image data  
2     by using bounding boxes further comprises:  
3           finding a vertical feature of the desired physical feature by finding a valid vertical  
4     bounding box;  
5           determining whether a valid vertical feature is found;  
6           using the valid vertical feature as a reference point for the search for the horizontal  
7     feature and finding a valid horizontal bounding box of the desired physical feature when a  
8     vertical feature is positively identified;  
9           determining whether a valid horizontal feature is found; and  
10          identifying a top-left intersection of the vertical and horizontal bounding boxes with  
11     the bottom-right corner of the desired physical feature when a valid horizontal feature is  
12     found.

1           9.     (Original)     The method of claim 8 wherein the desired physical feature  
2     comprises a top left intersection of a vertical and horizontal member of a cartridge cell within  
3     a tape library system.

1           10.    (Original)     The method of claim 9 further comprising using the position of  
2     the intersection relative to the imager to calibrate the physical position of the picker  
3     assembly.

1           11.    (Canceled)

1           12.     (Previously Presented)       The method of claim 7 further comprising using  
2     the position of the intersection relative to the imager to calibrate the physical position of the  
3     picker assembly.

1           13.     (Currently Amended) An article of manufacture comprising a program  
2     storage medium readable by a computer, the medium tangibly embodying one or more  
3     programs of instructions executable by the computer to perform a method for use in aligning  
4     a tape cartridge picker with cartridges in cells of a tape cartridge magazine, the method  
5     comprising:  
6           illuminating an object with an illumination source;  
7           gathering image data for the illuminated object; ~~and~~  
8           thresholding the image data; and  
9           processing the thresholded image data by using bounding boxes to identify the  
10    location of a desired physical feature in the thresholded image data;  
11           wherein the desired physical feature comprises a top left intersection of a vertical and  
12    horizontal member of a cartridge cell within a tape library system.

1           14.     (Original)     The article of manufacture of claim 13 wherein the processing  
2     the image data by using bounding boxes further comprises:  
3           finding a vertical feature of the desired physical feature by finding a valid vertical  
4     bounding box;  
5           determining whether a valid vertical feature is found;  
6           using the valid vertical feature as a reference point for the search for the horizontal  
7     feature and finding a valid horizontal bounding box of the desired physical feature when a  
8     vertical feature is positively identified;  
9           determining whether a valid horizontal feature is found; and  
10          identifying a top-left intersection of the vertical and horizontal bounding boxes with  
11     the bottom-right corner of the desired physical feature when a valid horizontal feature is  
12     found.

1           15.     (Original)     The article of manufacture of claim 14 wherein the desired  
2     physical feature comprises a top left intersection of a vertical and horizontal member of a  
3     cartridge cell within a tape library system.

1           16.     (Original)     The article of manufacture of claim 15 further comprising  
2     using the position of the intersection relative to the imager to calibrate the physical position  
3     of the picker assembly.

1           17.     (Canceled)

1           18.     (Previously Presented)       The article of manufacture of claim 13 further  
2     comprising using the position of the intersection relative to the imager to calibrate the  
3     physical position of the picker assembly.

1           19.     (Original)       An imaging tape cartridge picker system for use in aligning a  
2     tape cartridge picker with cartridges in cells of a tape cartridge magazine, comprising:  
3         a picker assembly;  
4         illuminating means disposed at the front of the picker assembly for illuminating an  
5     object;  
6         imaging means disposed on the front of the picker assembly for gathering image data  
7     of the object; and  
8         processing means, coupled to the imaging means and illuminating means, for  
9     thresholding the image data obtained from the imaging means and for controlling the  
10    illuminating means;  
11         wherein the processing uses bounding boxes to identify the location of a desired  
12    physical feature in the thresholded image.

1           20.     (Original)     The imaging tape cartridge picker system of claim 19 wherein  
2     the processing means identifies the location of the desired physical feature using the  
3     bounding boxes by finding a vertical feature of the desired physical feature by finding a valid  
4     vertical bounding box, determining whether a valid vertical feature is found, using the valid  
5     vertical feature as a reference point for the search for the horizontal feature and finding a  
6     valid horizontal bounding box of the desired physical feature when a vertical feature is  
7     positively identified, determining whether a valid horizontal feature is found and identifying  
8     a top-left intersection of the vertical and horizontal bounding boxes with the bottom-right  
9     corner of the desired physical feature when a valid horizontal feature is found.

1           21.     (Original)     The imaging tape cartridge picker system of claim 20 wherein  
2     the desired physical feature comprises a top left intersection of a vertical and horizontal  
3     member of a cartridge cell within a tape library system.

1           22.     (Original)     The imaging tape cartridge picker system of claim 21 wherein  
2     the position of the intersection relative to the imager is used to calibrate the physical position  
3     of the picker assembly.

1           23.     (Original)     The imaging tape cartridge picker system of claim 19 wherein  
2     the desired physical feature comprises a top left intersection of a vertical and horizontal  
3     member of a cartridge cell within a tape library system.



- 1           24.     (Original)     The imaging tape cartridge picker system of claim 23 wherein  
2     the position of the intersection relative to the imager is used to calibrate the physical position  
3     of the picker assembly.